

APPENDIX A2

Next, the integrated information communication network proposed in Japanese Patent No.3084681-B2 closely related to the terminal-to-terminal communication connection control method of the invention in U.S. Patent Application No. 09/827,267 (filed on April 5, 2001) will now be briefly explained with reference to FIG. 12.

A block 191 shows an integrated IP communication network, an IP terminal 192-1 owns an IP address "EA01", and another IP terminal 192-2 owns an IP address "EA02". This example corresponds to such an example that an external IP packet 193-1 is transferred from the IP terminal 192-1 via the integrated IP communication network to the IP terminal 192-2. Both the IP addresses "EA01" and "EA02" are referred to as "external IP addresses", since these IP addresses are used outside the integrated IP communication network 191. In FIG. 12 to FIG. 15, as to head portions of IPs, only IP address portions are described, and other items are omitted.

When the network node apparatus 195-1 receives the external IP packet 193-1, this network node apparatus 195-1 confirms that the internal IP address is equal to "IA01", and the destination external IP address of the IP packet 193-1 is equal to "EA02". The internal IP address is applied to the terminal unit(logic terminal) of the logic communication line 194-1 into which the IP packet 193-1 is entered. Then, the network node apparatus 195-1 retrieves the content of the address management table 196-1 shown in FIG. 12, and retrieves such a record in which the internal IP address of the

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transmission source is equal to "IA01" in the beginning, and thereafter, the destination external IP address is equal to "EA02". Furthermore, the network node apparatus 195-1 checks as to whether or not the external IP address "EA01" of the transmission source within the IP packet 193-1 is contained in the previously detected record. It should be understood that such a check operation as to whether or not the external IP address "EA01" of the transmission source within the IP packet 193-1 is contained in the previously-detected record may be omitted.

In the present example, while it is such a record containing the IP addresses "EA01, EA02, IA01, IA02" on the second row from the top row, an IP packet 193-2 having such an IP header is formed (namely, IP packet is encapsulated) using the IP addresses "IA01" and "IA02" located inside the record. The IP header is such that the transmission source IP address is "IA01", and the destination IP address is "IA02". In this case, symbols "IA01" and "IA02" are called as internal IP addresses of the integrated IP communication network 191. The internal IP packet 193-2 is reached through the routers 197-1, 197-2 and 197-3 to the network node apparatus 195-2. The network node apparatus 195-2 removes the IP header of the received internal IP packet 193-2 (anti-encapsulation of IP packet), sends out the acquired external IP packet 193-3 to the communication line 194-2, and then, the IP terminal 192-2 receives the external IP packet 193-3. It should also be noted that 197-6 is an example of such a server that the external IP address is "EA81", and the internal IP address is "IA81".

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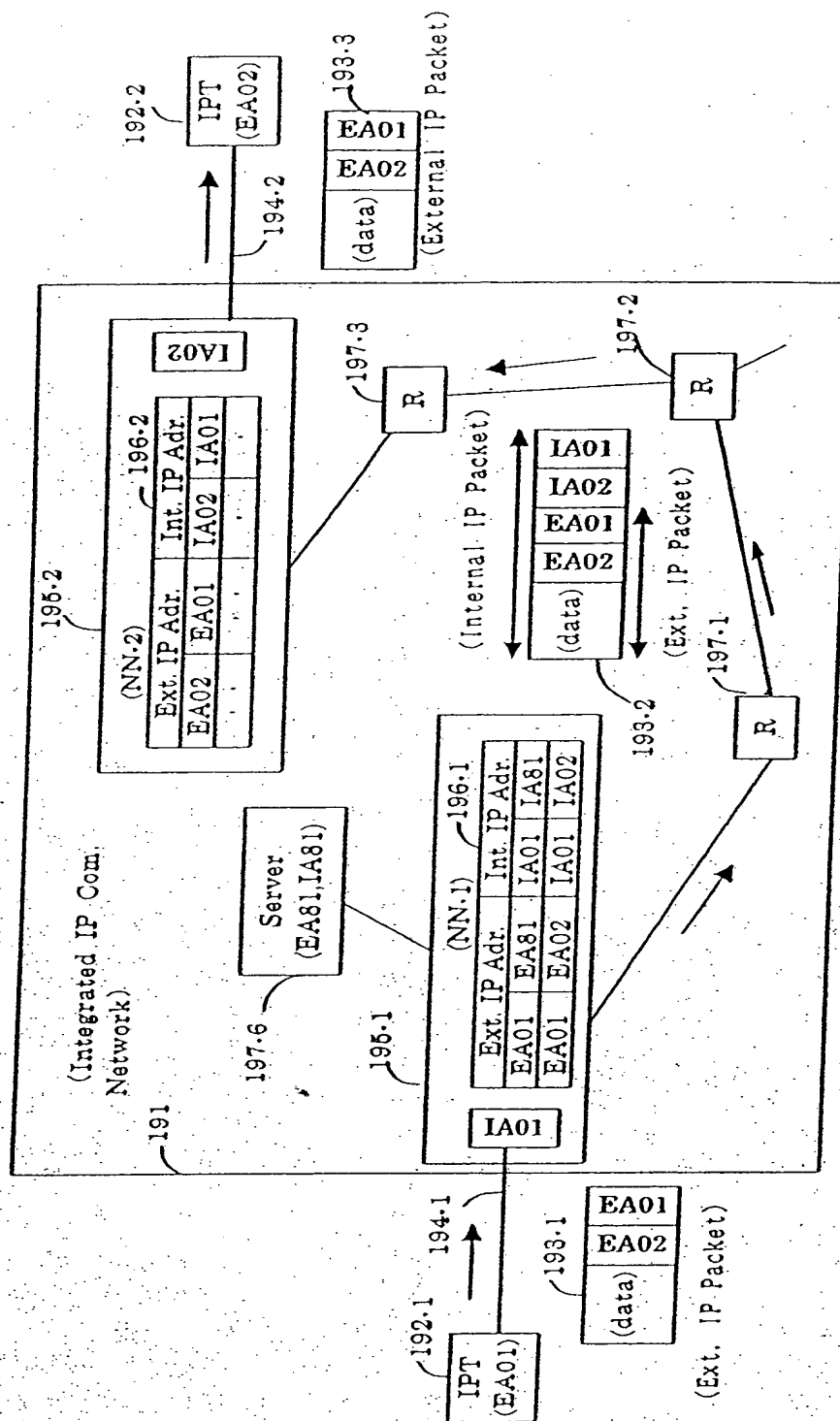


FIG. 12